U.S. COMPANY, CENTERS FOR DISEASE CONTROL HELP PURIFY WATER

WASHINGTON, MARCH 30 -- Chemists at a U.S. company have developed a powerful household water purification system that puts the cleansing power of an industrial water treatment plant into a container the size of a ketchup packet.

The Children's Safe Drinking Water program at Procter & Gamble, a consumer products company based in Ohio, has been developing the packets since 1995 in collaboration with the U.S. Centers for Disease Control and Prevention (CDC), according to a March 29 press release from the American Chemical Society.

The researchers have shown that the small packet, which acts as a chemical filter, can be added to highly contaminated water to reduce dramatically pathogen-induced diarrhea – the top killer of children in much of the developing world.

"There's clearly a need for simple, safe and effective decontamination systems for third world countries," said Greg Allgood, director of the Children's Safe Drinking Water program.

The packets also show promise for boosting water safety during emergencies and natural disasters, such as earthquakes, floods and hurricanes, when water purity suddenly is compromised, the researchers say.

Use of the lifesaving packets is being expanded globally.

According to public health experts, about 1.5 million children under age 5 die each year around the world from simple diarrhea caused by bacteria and other pathogens (disease-causing microorganisms) in drinking water.

That translates to about 4,000 children dying each day as a result of contaminated water.

In countries that lack modern water purification systems, boiling is often the main water decontamination method, Allgood said. But boiling must be done properly to be effective.

Unlike large stationary purification systems, the packets are small and portable and can be used in remote locations and emergency situations.

In tests conducted by CDC involving 25,000 people in Guatemala, Pakistan and Kenya, the chemical packets reduced the incidence of diarrhea by about 50 percent, Allgood said.

The packets also were tested by researchers from Johns Hopkins University in Maryland at a refugee camp in Liberia, and produced a more than 90 percent reduction in diarrhea.

The system, "PUR Purifier of Water," consists of a packet containing a grayish powder composed of chemicals, including bleach, that can remove contaminants within minutes of being added to water.

The packets can kill waterborne pathogens that cause cholera, typhoid and dysentery; remove toxic metals like lead, arsenic and mercury; and remove some pesticides, Allgood said.

A single packet can decontaminate 9.5 liters of drinking water. The packet is added to a large container of impure water, stirred, filtered through a cloth to remove impurities, then allowed to sit for 20 minutes. The result is clear, safe drinking water.

Each packet costs a few cents and Procter & Gamble has been providing them free to some countries hit hard by sudden water emergencies, he said. More than 40 million packets have been distributed worldwide for sustained water remediation and emergency relief, Allgood said.

A drinking water fact sheet (http://www.cdc.gov/ncidod/dpd/healthywater/factsheets.htm) is available at the CDC Web site.

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